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MORBIDITY AND MORTALITY WEEKLY REPORT

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American Heart Month — February 2000

In 1997, heart disease was the leading cause of death and stroke was the third leading cause of death among U.S. adults (1), affecting approximately 726,974 and 159,791 persons, respectively (1). A high proportion of these deaths can be prevented by reducing or controlling risk factors, including smoking, physical inactivity, dietary intake of cholesterol, obesity, diabetes, and high blood pressure (2). In conjunction with American Heart Month, this issue of *MMWR* includes a report that describes excess stroke deaths among U.S. adults by age and racial/ethnic group.

During February, CDC-funded state cardiovascular health programs and their partners will highlight prevention programs that use culturally appropriate approaches to reduce the level of disparity in heart disease and stroke. For example, two counties in North Carolina are using policy and environmental changes to improve nutrition and to increase physical activity in the black community. In New York, the Healthy Heart Program and its local partners are sponsoring a campaign in two urban areas to encourage blacks and others to switch to low-fat or fat-free milk.

Information about warning signs and risk factors for cardiovascular disease (including heart disease and stroke) is available on the World-Wide Web: National Heart, Lung, and Blood Institute, <http://www.nhlbi.nih.gov/about/nhaap>; Brain Attack Coalition, <http://www.stoke-site.org>; American Heart Association, <http://www.americanheart.org>; American Stroke Association, <http://www.strokeassociation.org>; and National Stroke Association, <http://www.stroke.org>.^{*} Information about cardiovascular disease is available from CDC at <http://www.cdc.gov/nccdphp>.

References

1. Hoyert DL, Kochanek KD, Murphy SL. Deaths: final data for 1997. National Vital Statistics Reports; vol 47, no. 19. Hyattsville, Maryland: US Department of Health and Human Services, CDC, National Center for Health Statistics, 1999.
2. Grundy SM, Balady GJ, Criqui MH, et al. Guide to primary prevention of cardiovascular diseases. *Circulation* 1997;95:2329-31.

^{*}References to sites of non-CDC organizations on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites.

Age-Specific Excess Deaths Associated with Stroke Among Racial/Ethnic Minority Populations — United States, 1997

Stroke was the third leading cause of death in the United States in 1997 (1). During 1950–1996, age-standardized stroke death rates declined 70% for the entire U.S. population (2); however, the decline varied among racial/ethnic populations (1). The estimated number of stroke deaths by race/ethnicity and age illustrate the differences in stroke mortality that may be used to direct prevention efforts. This report presents an analysis of stroke mortality by age and racial/ethnic group; the findings indicate that for persons aged 35–64 years, excess stroke deaths and higher risk for stroke mortality occurred among members of U.S. racial/ethnic minority populations than among the non-Hispanic white population.

Excess death is the difference between the number of deaths observed in a racial/ethnic group and the number of deaths that would have occurred in that group if it had the same death rate as the non-Hispanic white population (3). Relative risk is the ratio of the stroke death rate of the minority group compared with that of the non-Hispanic white population accounting for differences in population size. The 1997 death certificate data were used to determine excess death and relative risk for stroke mortality by racial/ethnic group (non-Hispanic blacks, Hispanics, American Indians/Alaska Natives [AIs/ANs], and Asians/Pacific Islanders [As/Pis]) and by age group (35–44, 45–54, 55–64, 65–74, 75–84, and ≥85 years). Non-Hispanic whites in each age group were the referent group. Observed stroke deaths were those for which the underlying cause of death listed on the death certificate by a physician, medical examiner, or coroner was *International Classification of Diseases, Ninth Revision* (ICD-9), codes 430–438. Demographics on death certificates (e.g., age, race, and ethnicity) are reported by funeral directors usually on the basis of observation or are provided by family members. National mortality statistics were based on information from death certificates filed in state vital statistics offices and were compiled by CDC (1). Expected deaths were calculated by multiplying the number of persons in each age-specific racial/ethnic group by the death rates in the corresponding non-Hispanic white group. Age-specific excess deaths were calculated by subtracting the observed deaths from the expected deaths for each age-specific group. Relative risks were calculated by dividing the death rate for each age-specific group by the corresponding death rate for non-Hispanic whites.

The number of excess stroke deaths was largest for non-Hispanic blacks and As/Pis aged 35–84 years (6370 and 220, respectively) (Table 1); no excess stroke deaths occurred among non-Hispanic blacks and As/Pis for persons aged ≥85 years. Hispanics and AIs/ANs aged 35–64 years had 242 and 41 excess stroke deaths, respectively; no excess stroke deaths occurred for Hispanics and AIs/ANs aged ≥65 years.

The relative risk for stroke mortality among racial/ethnic groups compared with non-Hispanic whites decreased with age (Figure 1). Non-Hispanic blacks had approximately four times the relative risk for persons aged 35–54 years, three times for persons aged 55–64 years, and approximately equal relative risk for persons aged ≥85 years. AIs/ANs had almost twice the relative risk for stroke mortality than non-Hispanic whites among persons aged 35–44 years and 1.3 times for persons aged 45–64 years; the risk was lower among persons aged ≥85 years. As/Pis had approximately 1.3 times the relative risk of stroke mortality among persons aged 35–64 years and a lower relative risk among persons age ≥85 years. Among Hispanics, the relative risk for stroke death was approxi-

Age-Specific Excess Deaths Associated with Stroke — Continued

TABLE 1. Excess deaths associated with stroke,* by race/ethnicity and age group — United States, 1997

Race/Ethnicity [†]	Age group (yrs)	Observed deaths	Death rate [‡]	Expected deaths [§]	Excess deaths**
Non-Hispanic white ^{††}	35-44	1,475	4.5	—	—
	45-54	3,322	12.7	—	—
	55-64	6,300	36.2	—	—
	65-74	19,265	125.4	—	—
	75-84	46,741	460.8	—	—
	≥85	55,294	1,648.8	—	—
Non-Hispanic black	35-44	942	18.2	233.1	708.9
	45-54	1,718	50.1	435.3	1,282.7
	55-64	2,342	110.1	770.2	1,571.8
	65-74	3,838	240.8	1,998.8	1,839.2
	75-84	4,843	575.8	3,875.6	967.4
	≥85	4,055	1,415.1	4,724.7	-669.7
American Indian/ Alaska Native	35-44	25	8.4	13.4	11.6
	45-54	34	16.2	26.7	7.3
	55-64	67	53.9	45.0	22.0
	65-74	93	118.0	98.9	-5.9
	75-84	147	346.5	195.5	-48.5
	≥85	111	646.7	283.0	-172.0
Asian/Pacific Islander	35-44	92	5.7	72.1	19.9
	45-54	190	16.5	145.9	44.1
	55-64	332	50.4	238.5	93.5
	65-74	587	134.6	547.0	40.0
	75-84	934	472.0	911.7	22.3
	≥85	639	1,183.8	890.0	-251.0
Hispanic	35-44	253	5.8	197.6	55.4
	45-54	431	16.5	331.5	99.5
	55-64	635	42.0	547.6	87.4
	65-74	1,161	113.7	1,280.1	-119.1
	75-84	1,411	293.5	2,215.6	-804.6
	≥85	1,247	779.0	2,639.5	-1,392.5

* International Classification of Diseases, Ninth Revision codes 430-438.

† Racial/ethnic categories are mutually exclusive.

‡ Per 100,000 population.

§ Calculated by multiplying the number of persons in a specific age group and racial/ethnic category by the corresponding age-specific rate observed in the non-Hispanic white population.

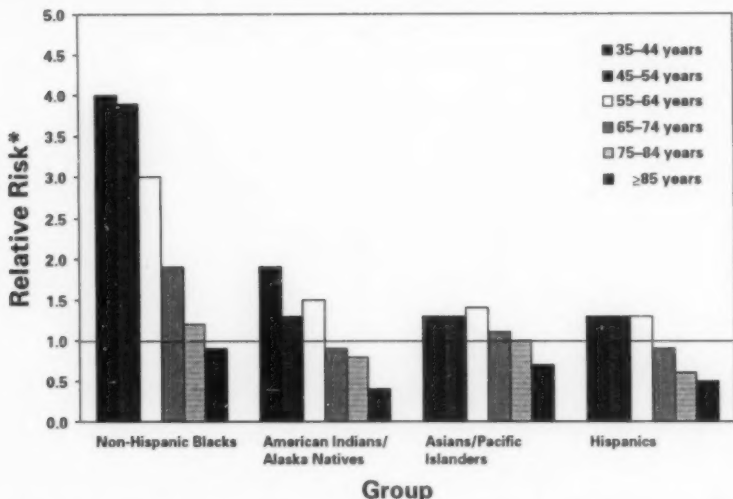
** Observed number of deaths minus expected number of deaths.

†† Referent group.

mately 1.3 times higher among persons aged 35-64 years, and approximately equal to non-Hispanic whites among persons aged ≥65 years.

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Editorial Note: The findings in this report highlight the excess number of stroke-related deaths among non-Hispanic black, Als/ANs, As/PIs, and Hispanics compared with non-Hispanic white adults, especially among those aged 35-64 years. Excess deaths among racial/ethnic groups compared with non-Hispanic whites might be the result of greater prevalence of risk factors for stroke (e.g., obesity, uncontrolled hypertension, physical inactivity, poor nutrition, diabetes, and smoking) and other factors (e.g., lower socioeconomic status, predisposition for greater disease severity, and poor survival at

*Age-Specific Excess Deaths Associated with Stroke — Continued***FIGURE 1. Risk for stroke mortality among racial/ethnic minority groups compared with non-Hispanic whites, by age — United States, 1997**

*A relative risk of 1.0 implies no difference between non-Hispanic whites and the racial/ethnic group; a relative risk of >1.0 demonstrates a higher mortality compared with non-Hispanic whites and a relative risk of <1.0 demonstrates lower mortality.

younger ages) (4,5,7). Excess stroke deaths also may result from barriers to adequate medical care, including preventive, diagnostic, and therapeutic interventions (4) and health insurance coverage (5). Non-Hispanic blacks, As/Pis, and Hispanics have lower rates of health-care coverage than non-Hispanic whites (6); however, availability of health insurance or high-quality care does not indicate complete access to or use of medical care. Other barriers include lack of trust in the health-care system and fear of invasive medical procedures (5), transportation difficulties, and unfamiliarity with early warning signs of stroke (5).

Despite progress in preventing and treating risk factors for stroke (e.g., increases in the use of antihypertensive therapy), the increasing prevalence of heart disease, diabetes, and obesity in the United States has increased the relative risk for stroke, particularly among blacks (4). Racial/ethnic differences in susceptibility to hemorrhagic and ischemic stroke subtypes are related strongly to uncontrolled high blood pressure and smoking (7). The increased frequency of intracerebral hemorrhages among blacks is attributable mostly to greater occurrence of hypertension (7). The greater number and severity of strokes in some racial/ethnic groups may be associated with differences in hypertension prevalence and control in all age groups (8).

The data in this report are subject to at least four limitations. First, misclassification of race/ethnicity on death certificates and in the population census may result in understated reported death rates among AIs/ANs, As/Pis, and Hispanics. For the same reason,

Age-Specific Excess Deaths Associated with Stroke — Continued

death rates for black and white populations may be overstated (9). Second, although variations among subpopulations may exist, the burden of stroke deaths is not shown for subgroups within the larger racial/ethnic groups. Third, the smaller sizes of populations of As/Pis and Als/ANs can result in unstable estimates and produce overstated or understated death rates from year to year. Finally, this analysis did not control for stroke risk factors.

Reducing stroke mortality among groups at highest risk largely depends on reaching them before unhealthy behaviors are adopted. Public health interventions can be community-based or can target persons at greatest risk. For example, in 1999, CDC began Racial and Ethnic Approaches to Community Health 2010 (REACH), community-based, culturally appropriate approaches to reduce cardiovascular disease and stroke among racial/ethnic populations. The national Brain Attack Coalition educates the public about the early warning symptoms of stroke to increase the likelihood of early diagnosis and prompt, effective treatment. Targeted research and evaluation among racial/ethnic populations may help identify differences among subpopulations related to lower socioeconomic or educational levels or related to adverse environmental factors. CDC is working with 11 state-based prevention and education programs that aim to reduce cardiovascular disease and stroke by improving nutrition, increasing physical activity, and promoting healthy behaviors.

References

1. Hoyert DL, Kochanek KD, Murphy SL. Deaths: final data for 1997. National vital statistics reports; vol 47, no. 19. Hyattsville, Maryland: US Department of Health and Human Services, CDC, National Center for Health Statistics, 1999.
2. CDC. Decline in deaths from heart disease and stroke—United States, 1900–1999. *MMWR* 1999;48:649–56.
3. Heckler M. Report of the Secretary's Task Force on Black & Minority Health: mortality and morbidity indicators. Washington, DC: US Department of Health and Human Services, August 1985:63–85.
4. Gillum RF. Stroke mortality in blacks: disturbing trends. *Stroke* 1999;30:1711–5.
5. Mayberry RM, Mili F, Vaid IGM, et al. Racial and ethnic differences in access to medical care: a synthesis of the literature. Washington, DC: Morehouse Medical Treatment Effectiveness Center (MMEDTEC), Morehouse School of Medicine, 1999.
6. CDC. Chronic diseases and their risk factors: the nation's leading causes of death. Atlanta, Georgia: US Department of Health and Human Services, CDC, 1999.
7. Caplan LR. Cerebral ischemia and infarction in blacks. In: Gillum RF, Gorelick PB, Cooper ES, eds. *Stroke in blacks*. Basel, Switzerland: Karger, 1999:7–18.
8. Burt VL, Whelton P, Rocella EJ, et al. Prevalence of hypertension in the US adult population: results from the third National Health and Nutrition Examination surveys, 1988–1991. *Hypertension* 1995;25:305–13.
9. Rosenberg HM, Maurer JD, Sorlie PD, et al. Quality of death rates by race and Hispanic origin: a summary of current research, 1999. *Vital Health Stat* 1999;2:1–13.

Elevated Blood Lead Levels Among Internationally Adopted Children — United States, 1998

Lead poisoning has been reported recently among Chinese children adopted by U.S. citizens (7). However, little is known about the prevalence of elevated blood lead levels (BLLs) among adoptees from China and other countries. Persistent sources of lead expo-

Elevated Blood Lead Levels Among Internationally Adopted Children — Continued

sure outside the United States include leaded gasoline exhaust; industrial emissions; cottage industries (e.g., battery breaking and recycling plants); traditional medicines; and some cosmetics, ceramic ware, and foods (2). In 1998, approximately 15,000 orphans from countries outside the United States who were adopted abroad or were to be adopted in the United States by U.S. citizens were issued U.S. immigrant visas—a nearly two-fold increase over 1988 (L. Lewis, Immigrant and Visa Control and Reporting Division, VISA Office, Bureau of Consular Affairs, U.S. State Department, personal communication, August 1999) (3). Some orphans have been abandoned for extended periods and have no obtainable medical history (4). Immigrants aged <15 years are not required to have serologic or blood tests either in their country of origin or on entry into the United States unless exposure to syphilis or human immunodeficiency virus is suspected (5). To obtain reports on the prevalence of elevated BLLs (≥ 10 $\mu\text{g/dL}$) among international adoptees, CDC contacted 12 international adoption medical specialists identified through the Joint Council on International Children's Services and two collaborating medical specialists (6). This report summarizes the results of that investigation, which suggest that international adoptees may arrive in the United States with elevated BLLs.

Of the 14 reporting sites contacted, nine had data on blood lead tests among adopted children who immigrated during 1991–1999. The data represented seven clinical practices where blood lead tests were conducted by venipuncture (five of which tested all international adoptees for BLLs) and two surveys by pediatric providers. Data were included if at least 25 children were tested from a specified country or region.

The prevalences of elevated BLLs ranged from 1% to 13% among Chinese adopted children and from 1% to 5% among Russian adopted children (Table 1). In six of the nine reports on Chinese children and four of the six reports on Russian children, 70% or more of the children were tested for elevated BLLs within 4 weeks of arrival to the United States. Among 223 Chinese children surveyed by one site (Table 1), the prevalence of elevated BLLs was 2.3 times higher (18%) among children tested within 4 weeks of arrival in the United States than among children tested after 4 weeks (8%). Limited data were available on the prevalence of elevated BLLs among adopted children from other countries of origin (Table 1).

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Editorial Note: Most of the reported prevalences of elevated BLLs among Chinese adoptees were higher than the prevalence among U.S. children (7). Among U.S. children aged 1–2, 3–5, and 6–11 years, the prevalence of elevated BLLs during 1991–1994 was 6%, 4%, and 2%, respectively (7). For some adopted children, blood lead testing occurred soon after arrival to the United States, suggesting that exposure occurred before emigration. The lower prevalence of elevated BLLs among Chinese children tested later than 4 weeks after arrival than among those tested within 4 weeks of arrival further indicates that, for many of these children, elevated BLLs probably developed before they arrived in the United States.

Elevated Blood Lead Levels Among Internationally Adopted Children — Continued

TABLE 1. Blood lead levels (BLLs) among internationally adopted children from Asia, Eastern Europe, and Central and South America — United States, 1991–1999

Country of origin	No. tested	Elevated BLLs		Highest reported BLL ($\mu\text{g/dL}$)	No. weeks tested after arrival in U.S.	% tested within 4 weeks of arrival	Mean age (range) in mos.	Years of immigration	Reporting site*
ASIA									
China	138	2	(1)	15	0– 36	79%	15 (8– 96)	1996–99	(1)
	48	3	(6)	14	0– 50	55%	18 (6– 75)	1996–98	(2)
	30	2	(7)	19	0– 52	87%	16 (7– 71)	1997–99	(3)
	25	2	(8)	24	2– 50	70%	22 (10– 96)	1997–99	(4)
	184	21	(11)	54	0– 2	100%	16 (4– 43)	1994–98	(5)
	92	10	(11)	50	0– 16	—	14 (3– 39)	1991–98	(6)
	60	7	(12)	23	0– 25	98%	12 (5– 54)	1994–99	(7)
	83	11	(13)	25	0–165	75%	16 (5– 57)	1992–98	(8)
	223	29	(13)	50	0–160	51%	25 (2– 57)	1993–96	(9)
Cambodia	71	5	(7)	27	0– 38	79%	11 (3– 54)	1997–99	(9)
Asia (excluding China)	47	1	(2)	10	0–156	—	— (4–123)	1987–98	(6)
EASTERN EUROPE									
Russia	219	2	(1)	12	0– 2	100%	27 —	1993–99	(5)
	74	1	(1)	12	0–106	85%	23 (5–125)	1991–98	(8)
	57	1	(2)	15	0– 52	45%	32 (6–105)	1996–98	(2)
	41	1	(2)	14	3– 20	71%	13 (7–108)	1997–99	(1)
	81	2	(3)	11	0–120	83%	23 (5– 88)	1996–99	(3)
	85	4	(5)	11	0–244	—	— (3–108)	1992–98	(6)
Eastern Europe (excluding Russia)	33	1	(3)	11	1–195	35%	46 (13–150)	1994–98	(2)
	74	5	(7)	15	0–248	—	— (1– 93)	1989–97	(6)
CENTRAL AND SOUTH AMERICA									
	95	1	(1)	22	0–424	—	— (1–106)	1982–97	(6)

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Data are limited on the prevalence of elevated BLLs among children living in China. Among selected populations of children aged 1–6 years living in China, prevalences of elevated BLLs of up to 38% have been reported (8). Among Russian school-aged children, prevalences of elevated BLLs of up to 58% have been reported in one city (CDC, unpublished data, August 1999). The lower prevalence of elevated BLLs among children who have emigrated from China and Russia compared with levels among children residing in China and Russia may be related to variations in lead exposure by region of country or to the expected decline in BLLs over time once children have arrived in the United States and are no longer exposed to sources of lead.

Elevated Blood Lead Levels Among Internationally Adopted Children — Continued

In this report, most of the children screened by the international adoption clinics were from Russia or China. Similarly, of all U.S. immigrant visas issued to orphans in 1998, most (55%) were issued to children from Russia and China (L. Lewis, Immigrant and Visa Control and Reporting Division, VISA Office, Bureau of Consular Affairs, U.S. State Department, personal communication, August 1999). Because most children immigrating as adoptees are not screened by the international adoption medical specialist clinics in this report, selection bias may affect this sample.

The American Academy of Pediatrics recommends that children who have been adopted or emigrated from countries where lead poisoning is prevalent should be screened for elevated BLLs (9). CDC recommends that young children at high risk for lead exposure be screened with a blood lead test (10). Accordingly, international adoptees from countries where lead poisoning is prevalent should receive a blood lead test after arrival in the United States. Some adopted children have had high enough levels to warrant chelation therapy ($\geq 45 \mu\text{g/dL}$). Children with elevated BLLs should receive follow-up medical attention that adheres to CDC guidelines and state and local policies and laws, and their families should receive information on the prevention of lead poisoning (10). For children with BLLs high enough to warrant source investigation, investigators should consider that lead exposure may have occurred before arrival in the United States in addition to considering sources of lead exposure in the current environment.

References

1. Aronson JE, Johnson DE, Hostetter MK, et al. Lead poisoning in children adopted from China [Abstract]. San Francisco, California: Pediatric Academic Society Meeting, May 1999.
2. CDC. Preventing lead poisoning in young children. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, 1991.
3. Bureau of Consular Affairs. Report of the VISA Office, 1997. Washington, DC: US State Department, 1998; US State Department publication no. 10577.
4. Hossetter MK, Iverson S, Thomas W, et al. Medical evaluation of internationally adopted children. *N Engl J Med* 1991;325:479-85.
5. CDC. Technical instructions for medical examination of aliens. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, June 1991.
6. Joint Council on International Children's Services Education Committee. The adoptive parent preparation system. Cheverly, Maryland: Joint Council on International Children's Services, 1998.
7. Pirkle JL, Kaufmann RB, Brody DJ. Exposure of the U.S. population to lead, 1991-1994. *Environ Health Perspect* 1998;106:745-50.
8. Yan CH, Shen XM, Zhang YW, et al. The epidemiological study of children's blood lead levels and risk factors in Shanghai City. *Chinese Journal of Pediatrics* 1998;36:142-5.
9. American Academy of Pediatrics. Screening for elevated blood lead levels. *Pediatrics* 1998;101:1072-8.
10. CDC. Screening young children for lead poisoning: guidance for state and local public health officials. Atlanta, Georgia: US Department of Health and Human Services, CDC, 1997.

Vaccination Coverage Among Adolescents 1 Year Before the Institution of a Seventh Grade School Entry Vaccination Requirement — San Diego, California, 1998

In 1996, the Advisory Committee on Immunization Practices, the American Academy of Pediatrics, the American Association of Family Physicians, and the American Medical Association recommended routine health-care visits for children aged 11–12 years, emphasizing vaccination with hepatitis B vaccine; measles, mumps, and rubella vaccine (MMR); tetanus and diphtheria toxoids (Td); and varicella vaccine (1). Because no national data exist regarding vaccination coverage among adolescents, the impact of these recommendations is unknown. In October 1997, California enacted Assembly Bill 381 (AB381) that requires students entering the seventh grade on or after July 1, 1999, to have received three doses of hepatitis B vaccine and two doses of MMR. To assist in planning and implementing AB381, the San Diego County Health Department expanded its 1998 infant and adult vaccination survey to include fifth and sixth graders. This report summarizes the findings from that survey, which indicate that most fifth and sixth graders lacked required and recommended vaccinations.

In April 1998, San Diego County households were sampled randomly by telephone. For households in which children entering the fifth or sixth grade resided, parents who agreed to participate in the survey were asked to use their parent-held vaccination record to report their child's vaccination history. If a parent-held record could not be located, parents were asked to recall which vaccinations the child had received. All participating parents were asked for consent to obtain the child's vaccination history from their health-care provider. Data were obtained on hepatitis B vaccine, MMR, Td, and varicella vaccine.

Of 741 households contacted with an eligible child, 489 (66.0%) participated in the survey. Vaccination histories were verified for 203 (41.5%) participants; verification methods included parent-held records (n=84), provider records (n=75), and parent-held and provider records (n=44). Among the remaining 286 (58.5%), reasons no parent-held record or provider record was available included 1) a written record could not be located by the parent; 2) consent to contact the provider was not given; 3) provider could not be contacted; 4) medical record could not be located; or 5) medical record lacked vaccination data.

Among the 203 children with verified vaccination records, 15.8% had received three doses of hepatitis B vaccine, and 26.6% had received one or two doses; 70.0% had received two doses of MMR, 16.2% of those reporting no history of chicken pox had received varicella vaccine, and 9.4% had received a Td booster (Table 1). Vaccination coverage for fifth graders was similar to that for sixth graders.

Among the 286 children whose vaccination information was not verified by parent-held or provider vaccination records, 44.1% of parents (95% confidence interval [CI]=38.2%–50.0%) reported that their child had received three doses of hepatitis B vaccine and 5.6% (95% CI=3.2%–8.9%) reported that the child had received one or two doses. For these participants, reported coverage for children for two doses of MMR was 82.5% (95% CI=77.3%–87.0%) and coverage for Td was 80.5% (95% CI=75.0%–85.2%). Varicella vaccine coverage among 61 susceptible persons was 31.1% (95% CI=19.9%–44.5%).

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Vaccination Coverage Among Adolescents — Continued

TABLE 1. Vaccination coverage among children entering the fifth and sixth grade, by vaccine — San Diego County, California, 1998*

Vaccine/Dose	Vaccinated		(95% CI [†])
	No.	(%)	
Measles, mumps, and rubella			
Two doses	142	(70.0)	(63.1%–76.2%)
Hepatitis B			
One or two doses	54	(26.6)	(20.7%–33.2%)
Three doses	32	(15.8)	(11.0%–21.5%)
Tetanus and diphtheria toxoids booster	19	(9.4)	(5.7%–14.2%)
Varicella [‡]	6	(16.2)	(6.2%–32.0%)

*Verified by personal vaccination record or providers' record, n=203.

[†]Confidence interval.[‡]Analysis restricted to children without a history of varicella, n=37.

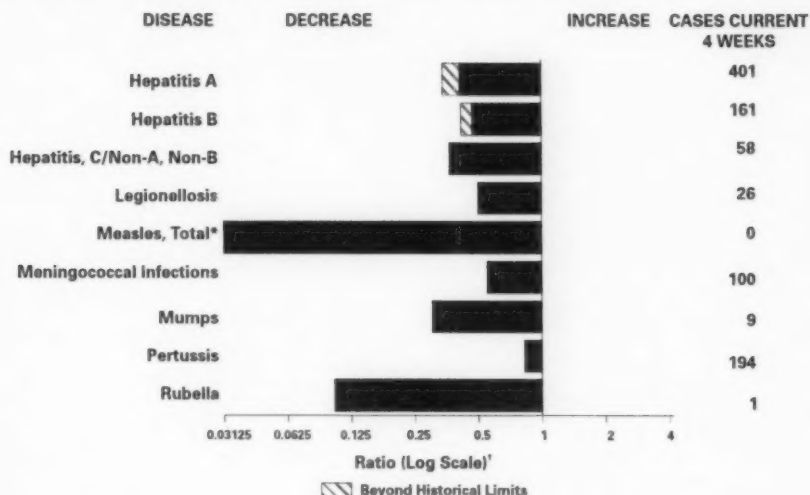
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Editorial Note: This is the first study that has assessed population-based vaccination coverage of adolescents. The findings suggest that in the absence of a school requirement, most adolescents lack documentation of recommended vaccinations. Reliable estimates of vaccination coverage among adolescents are difficult to obtain. For example, reported coverage among children with record-verified vaccinations may underestimate actual coverage; if children do not visit the same health-care provider from birth through adolescence, parent-held records and providers' records may be incomplete. Frequently, parental recall of childhood vaccinations is inaccurate when compared with provider records (2); however, no studies have assessed the validity of parental recall of adolescent vaccinations. New methods to accurately measure adolescent vaccination coverage are needed so that coverage levels can be assessed reliably, the impact of vaccination programs for adolescents measured, and overvaccination of adolescents resulting from incomplete documentation avoided.

School vaccination requirements are an effective means of increasing vaccination coverage and preventing disease among children and adolescents (3,4). Emphasis has been placed on hepatitis B vaccination requirements because of the substantial disease burden of hepatitis B among adolescents and young adults. Hepatitis B vaccination requirements for middle school entry have been implemented in 14 states and the District of Columbia (5). In California, 477,584 seventh graders were subject to the 1999 seventh grade vaccination requirement of receipt of three doses of hepatitis B vaccine. An estimated 20,059 hepatitis B virus (HBV) infections and 168 HBV-related chronic liver disease deaths expected during the lifetime of this cohort may be averted if each seventh grader received the required three doses of hepatitis B vaccine (6).

The findings in this report are subject to at least two limitations. First, only 66.0% of eligible persons participated in the survey, and the participants may not be representative of all fifth and sixth graders. Second, because the vaccination status was verified for only 41.5% of participants, results are subject to ascertainment bias.

(Continued on page 111)

FIGURE 1. Selected notifiable disease reports, comparison of provisional 4-week totals ending February 5, 2000, with historical data — United States

*No measles cases were reported for the current 4-week period, yielding a ratio for week 5 of zero (0).

[†]Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE 1. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending February 5, 2000 (5th Week)

	Cum. 2000		Cum. 2000
Anthrax	-	HIV infection, pediatric ^{††}	-
Brucellosis*	2	Plague	1
Cholera	-	Polio myelitis, paralytic	-
Congenital rubella syndrome	-	Psittacosis*	-
Cyclosporiasis*	2	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	14
Encephalitis:		Streptococcal disease, invasive Group A	230
California* serogroup viral	-	Streptococcal toxic-shock syndrome*	5
eastern equine*	-	Syphilis, congenital [†]	-
St. Louis*	-	Tetanus	-
western equine*	-	Toxic-shock syndrome	9
Ehrlichiosis	2	Trichinosis	-
human granulocytic (HGE)*	1	Typhoid fever	20
human monocytic (HME)*	2	Yellow fever	-
Hansen Disease*	-		
Hantavirus pulmonary syndrome ^{††}	4		
Hemolytic uremic syndrome, post-diarrheal*	-		

-: no reported cases

*Not notifiable in all states.

[†]Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).

^{††}Updated monthly from reports to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update December 26, 1999.

[‡]Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending February 5, 2000, and February 6, 1999 (5th Week)

Reporting Area	AIDS		Chlamydia ¹		Cryptosporidiosis		Escherichia coli O157:H7*			
							NETSS		PHLIS	
	Cum. 2000 ²	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	-	3,075	29,433	62,146	45	88	105	103	34	86
NEW ENGLAND	-	156	1,903	1,903	2	4	14	17	9	22
Maine	-	3	112	35	1	1	1	1	-	-
N.H.	-	3	72	103	-	-	3	-	3	1
Vt.	-	-	52	37	1	1	1	-	1	-
Mass.	-	122	906	835	-	2	3	11	1	10
R.I.	-	9	-	211	-	-	-	-	-	-
Conn.	-	19	761	682	-	-	6	5	4	11
MID. ATLANTIC	-	486	438	6,997	4	14	16	6	-	1
Upstate N.Y.	-	18	N	N	3	2	16	3	-	-
N.Y. City	-	236	-	3,715	1	10	-	-	-	1
N.J.	-	158	94	1,107	-	-	-	2	-	-
Pa.	-	74	374	2,175	-	2	N	N	-	-
E.N. CENTRAL	-	177	6,015	10,647	5	23	13	24	3	16
Ohio	-	37	1,212	3,874	4	3	4	14	1	6
Ind.	-	25	229	967	-	2	1	4	-	3
Ill.	-	77	1,828	2,555	-	2	5	2	-	2
Mich.	-	22	1,910	1,997	1	2	3	4	1	2
Wis.	-	16	838	1,254	-	14	N	N	1	3
W.N. CENTRAL	-	114	1,579	3,650	2	6	24	18	12	13
Minn.	-	22	350	802	-	1	7	6	3	8
Iowa	-	4	36	114	-	-	3	4	1	2
Mo.	-	73	688	1,512	2	4	14	2	6	1
N. Dak.	-	-	-	78	-	-	-	-	-	1
S. Dak.	-	-	112	224	-	-	-	-	-	-
Nebr.	-	5	201	390	-	-	-	2	1	1
Kans.	-	10	194	530	-	1	-	4	1	-
S. ATLANTIC	-	845	5,676	13,798	3	3	9	10	2	7
Del.	-	13	285	266	-	-	-	-	-	-
Md.	-	81	415	1,395	1	2	4	1	1	-
D.C.	-	8	200	N	-	1	-	-	U	U
Va.	-	84	857	1,473	-	-	1	4	-	2
W. Va.	-	10	-	235	-	-	-	-	1	1
N.C.	-	68	1,634	2,088	-	-	2	2	-	2
S.C.	-	56	669	2,710	-	-	-	1	-	1
Ga.	-	110	661	2,653	-	-	-	-	U	U
Fla.	-	445	955	2,978	2	-	2	2	-	1
E.S. CENTRAL	-	155	2,787	3,320	3	1	5	9	-	3
Ky.	-	15	588	572	-	1	2	3	U	U
Tenn.	-	62	1,168	1,300	-	-	2	3	-	2
Ala.	-	30	693	1,211	3	-	1	1	-	1
Miss.	-	48	338	237	-	-	-	2	-	-
W.S. CENTRAL	-	530	2,961	7,992	2	4	4	1	4	5
Ark.	-	19	298	448	1	-	2	-	-	2
La.	-	26	-	784	-	-	-	-	3	1
Okla.	-	6	711	925	-	-	-	-	-	-
Tex.	-	479	1,952	5,835	1	4	2	1	1	2
MOUNTAIN	-	45	1,833	3,343	5	9	11	5	2	4
Mont.	-	-	-	80	-	-	5	-	-	-
Idaho	-	4	64	165	1	1	-	-	-	-
Wyo.	-	-	60	62	-	-	1	1	-	1
Colo.	-	25	343	729	-	-	3	2	-	1
N. Mex.	-	4	34	526	-	4	-	-	-	-
Ariz.	-	4	916	1,334	2	4	-	1	-	-
Utah	-	4	295	180	N	N	-	1	-	2
Nev.	-	3	121	287	-	-	1	-	-	-
PACIFIC	-	567	6,241	10,496	19	24	9	13	2	15
Wash.	-	28	1,230	1,188	N	N	1	-	1	4
Oreg.	-	15	374	466	1	3	1	7	-	6
Calif.	-	509	4,445	8,357	18	21	6	6	-	5
Alaska	-	5	192	186	-	-	-	-	-	-
Hawaii	-	10	-	299	-	-	1	-	-	-
Guam	-	1	-	46	-	-	N	N	U	U
P.R.	-	92	113	U	-	-	-	1	U	U
V.I.	-	-	-	U	-	U	-	U	U	U
Amer. Samoa	-	-	-	U	-	U	-	U	U	U
C.N.M.I.	-	-	-	U	-	U	-	U	U	U

N: Not notifiable U: Unavailable - no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

* Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

¹ Updated monthly from reports to the Division of HIV/AIDS Prevention-Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update December 26, 1999.

² Chlamydia refers to genital infections caused by *C. trachomatis*. Totals reported to the Division of STD Prevention, NCHSTP.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending February 5, 2000, and February 6, 1999 (5th Week)

Reporting Area	Gonorrhea		Hepatitis C/NA/NB		Legionellosis		Lyme Disease	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	16,227	35,099	125	301	36	65	70	362
NEW ENGLAND	680	659	-	1	2	4	24	40
Maine	6	6	-	-	2	-	-	-
N.H.	8	5	-	-	-	1	10	-
Vt.	1	5	-	-	-	1	-	-
Mass.	284	263	-	1	-	1	14	40
R.I.	-	62	-	-	-	1	-	-
Conn.	381	318	-	-	-	-	-	-
MID. ATLANTIC	525	3,935	-	7	1	14	19	219
Upstate N.Y.	211	246	-	3	1	1	11	13
N.Y. City	-	1,814	-	-	-	4	1	12
N.J.	52	780	-	-	-	3	-	76
Pa.	262	1,095	-	4	-	6	7	118
E.N. CENTRAL	3,607	6,387	27	196	10	24	1	14
Ohio	603	1,664	-	-	8	7	1	5
Ind.	168	628	-	-	-	1	-	-
Ill.	920	1,984	1	3	-	3	-	1
Mich.	1,406	1,495	26	63	2	8	-	1
Wis.	510	616	-	130	-	5	U	7
W.N. CENTRAL	690	1,946	18	23	2	3	2	4
Minn.	160	305	-	-	-	-	1	-
Iowa	31	32	-	-	1	2	-	1
Mo.	324	1,196	18	21	1	1	1	1
N. Dak.	-	7	-	-	-	-	-	1
S. Dak.	8	23	-	-	-	-	-	-
Nebr.	79	184	-	1	-	-	-	-
Kans.	88	199	-	1	-	-	-	1
S. ATLANTIC	4,962	11,049	3	19	11	8	19	53
Del.	159	160	-	-	1	1	-	3
Md.	211	1,916	-	15	7	-	16	42
D.C.	206	347	-	-	-	-	-	1
Va.	971	1,274	-	1	-	2	-	-
W. Va.	-	81	-	1	N	N	-	-
N.C.	1,558	1,959	3	1	1	2	3	7
S.C.	574	1,429	-	1	2	1	-	-
Ga.	556	1,632	-	-	-	-	-	-
Fla.	727	2,251	-	-	-	2	-	-
E.S. CENTRAL	2,239	3,038	32	13	1	4	-	8
Ky.	274	332	3	-	-	2	-	-
Tenn.	1,001	1,121	8	9	-	2	-	2
Ala.	562	1,276	3	1	1	-	-	3
Miss.	402	309	18	3	-	-	-	3
W.S. CENTRAL	1,631	4,732	12	2	-	-	-	-
Ark.	187	280	-	-	-	-	-	-
La.	-	859	-	-	-	-	-	-
Okla.	356	516	-	1	-	-	-	-
Tex.	1,088	3,077	12	1	-	-	-	-
MOUNTAIN	740	985	19	24	4	4	1	-
Mont.	-	1	-	-	-	-	-	-
Idaho	4	10	-	3	1	-	-	-
Wyo.	4	2	9	11	-	-	-	-
Colo.	342	175	4	1	2	1	-	-
N. Mex.	8	116	3	6	-	1	-	-
Ariz.	285	537	3	2	-	-	1	-
Utah	46	16	-	1	1	2	-	-
Nev.	52	128	-	-	-	-	-	-
PACIFIC	1,153	2,368	14	16	5	4	4	24
Wash.	238	210	2	1	1	-	-	-
Oreg.	47	86	4	1	N	N	1	-
Calif.	846	1,973	8	14	4	4	3	24
Alaska	22	40	-	-	-	-	-	-
Hawaii	-	59	-	-	-	-	N	N
Guam	-	11	-	-	-	-	-	-
P.R.	28	29	-	-	-	-	N	N
V.I.	-	U	-	U	-	U	-	U
Amer. Samoa	-	U	-	U	-	U	-	U
C.N.M.I.	-	U	-	U	-	U	-	U

N: Not notifiable

U: Unavailable

- : no reported cases

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending February 5, 2000, and February 6, 1999 (5th Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	NETSS		PHLIS	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	46	110	210	380	1,476	2,216	502	2,346
NEW ENGLAND	-	2	35	62	91	121	64	132
Maine	-	-	7	5	9	16	-	8
N.H.	-	-	-	4	10	-	2	5
Vt.	-	-	2	10	1	7	1	8
Mass.	-	2	16	20	52	73	39	68
R.I.	-	-	-	7	1	3	1	14
Conn.	-	-	10	16	18	22	21	29
MID. ATLANTIC	5	38	48	71	72	343	4	291
Upstate N.Y.	4	6	42	40	30	50	4	86
N.Y. City	1	17	U	U	38	115	-	117
N.J.	-	12	6	18	-	96	-	85
Pa.	-	3	-	13	4	80	-	3
E.N. CENTRAL	3	12	-	1	202	396	88	355
Ohio	2	1	-	-	82	84	41	67
Ind.	-	-	-	-	15	13	-	24
Ill.	-	6	-	-	86	120	-	125
Mich.	1	2	-	1	35	101	33	98
Wis.	-	3	-	-	4	78	14	41
W.N. CENTRAL	-	6	15	55	67	96	65	151
Minn.	-	-	11	9	21	21	20	48
Iowa	-	2	3	6	11	15	8	18
Mo.	-	4	1	2	28	34	17	46
N. Dak.	-	-	-	10	-	1	1	4
S. Dak.	-	-	-	19	-	2	4	8
Nebr.	-	-	-	1	7	11	2	14
Kans.	-	-	8	-	-	14	13	14
S. ATLANTIC	18	27	91	139	260	348	87	421
Del.	-	-	5	3	8	10	2	52
Md.	13	11	17	40	59	63	21	U
D.C.	-	5	-	-	-	11	U	U
Va.	3	2	31	29	26	47	-	56
W. Va.	-	1	-	7	-	4	7	8
N.C.	2	1	21	35	73	102	30	90
S.C.	-	-	2	8	41	18	27	36
Ga.	-	2	-	-	-	27	-	125
Fla.	-	5	15	17	51	66	-	46
E.S. CENTRAL	2	2	2	11	82	180	-	86
Ky.	1	-	2	2	10	34	U	U
Tenn.	-	1	-	8	17	47	-	57
Ala.	1	1	-	1	35	54	-	23
Miss.	-	-	-	-	20	46	-	6
W.S. CENTRAL	-	1	-	8	52	80	70	259
Ark.	-	-	-	-	13	22	6	24
La.	-	-	-	-	-	-	18	44
Okla.	-	-	-	-	-	-	-	3
Tex.	-	1	-	8	-	21	-	188
MOUNTAIN	5	3	11	11	175	178	84	167
Mont.	-	1	5	1	5	1	-	8
Idaho	-	-	-	-	13	4	-	4
Wyo.	-	-	4	5	1	2	-	44
Colo.	1	-	-	1	21	46	10	20
N. Mex.	-	1	-	-	13	20	5	51
Ariz.	2	1	2	4	69	63	37	25
Utah	2	-	-	-	15	22	-	15
Nev.	-	-	-	-	-	-	-	-
PACIFIC	13	19	8	22	475	459	40	484
Wash.	-	1	-	-	7	7	2	61
Oreg.	1	2	-	-	31	25	36	47
Calif.	12	15	8	22	408	387	-	337
Alaska	-	-	-	-	7	6	2	3
Hawaii	-	1	-	-	22	34	-	36
Guam	-	-	-	-	-	-	-	-
P.R.	-	-	-	-	-	9	U	U
V.I.	-	-	2	4	-	37	U	U
Amer. Samoa	-	U	-	U	-	U	U	U
C.N.M.I.	-	U	-	U	-	U	U	U

N: Not notifiable

U: Unavailable

-: no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending February 5, 2000, and February 6, 1999 (5th Week)

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS		Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999†
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999				
UNITED STATES	798	1,195	183	731	332	624	313	983
NEW ENGLAND	20	27	10	31	6	9	5	18
Maine	1	-	-	-	-	-	-	-
N.H.	1	2	-	4	-	-	-	-
Vt.	-	1	-	1	-	1	-	-
Mass.	16	22	9	19	5	5	5	6
R.I.	-	-	-	3	-	-	-	9
Conn.	2	2	1	4	1	3	-	3
MID. ATLANTIC	16	86	3	61	9	24	65	111
Upstate N.Y.	6	20	3	16	-	2	-	4
N.Y. City	9	29	-	26	6	11	37	38
N.J.	-	27	-	19	-	7	22	35
Pa.	1	12	-	-	3	4	6	34
E.N. CENTRAL	172	255	27	108	66	83	9	103
Ohio	14	93	-	9	8	9	9	33
Ind.	16	3	-	3	13	23	-	7
Ill.	58	92	-	89	13	40	-	49
Mich.	81	31	25	-	23	7	-	11
Wis.	3	36	2	7	9	4	-	3
W.N. CENTRAL	40	73	22	62	4	23	19	20
Minn.	12	10	6	14	-	-	10	12
Iowa	8	-	7	-	-	-	-	-
Mo.	16	51	5	42	4	21	8	6
N. Dak.	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	1
Nebr.	4	6	2	3	-	1	1	-
Kans.	-	6	2	3	-	1	-	1
S. ATLANTIC	65	130	7	34	109	251	51	76
Del.	-	4	-	1	1	1	-	2
Md.	9	10	2	1	10	50	-	11
D.C.	-	6	U	U	5	10	-	4
Va.	9	4	-	2	17	17	-	9
W. Va.	-	3	-	-	-	1	-	5
N.C.	7	37	4	9	39	62	9	19
S.C.	3	14	1	4	11	22	18	25
Ga.	-	6	-	7	12	52	24	-
Fla.	37	46	-	10	14	36	-	1
E.S. CENTRAL	42	177	1	90	70	116	23	56
Ky.	9	18	U	U	3	15	-	5
Tenn.	19	127	1	82	52	49	4	11
Ala.	3	18	-	8	11	34	19	34
Miss.	11	14	-	-	4	18	-	6
W.S. CENTRAL	55	145	63	264	33	73	3	184
Ark.	13	11	-	10	1	3	3	-
La.	-	1	10	15	-	4	-	U
Okla.	-	54	1	8	20	16	-	4
Tex.	42	79	52	231	12	48	-	180
MOUNTAIN	112	84	29	51	16	16	16	29
Mont.	-	1	-	-	-	-	-	-
Idaho	13	2	-	1	-	-	-	-
Wyo.	-	1	-	-	-	-	-	-
Colo.	13	18	7	16	2	-	1	U
N. Mex.	13	5	5	6	-	-	3	4
Ariz.	62	50	13	21	14	16	8	11
Utah	2	5	4	5	-	-	4	8
Nev.	9	2	-	2	-	-	-	6
PACIFIC	276	216	21	30	19	29	122	386
Wash.	19	3	2	15	2	1	15	8
Oreg.	44	6	19	9	-	1	-	1
Calif.	209	201	-	-	17	26	98	353
Alaska	1	-	-	-	-	-	1	5
Hawaii	3	6	-	6	-	1	8	12
Guam	-	2	U	U	-	-	-	-
P.R.	-	4	U	U	16	28	-	-
V.I.	-	U	U	U	-	U	-	U
Amer. Samoa	-	U	U	U	-	U	-	U
C.N.M.I.	-	U	U	U	-	U	-	U

N: Not notifiable U: Unavailable - : no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

†Cumulative reports of provisional tuberculosis cases for 1999 are unavailable ("U") for some areas using the Tuberculosis Information System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending February 5, 2000, and February 6, 1999 (5th Week)

Reporting Area	<i>H. influenzae</i> , invasive		Hepatitis (Viral), by type				Measles (Rubella)				Total	
	Cum. 2000*	Cum. 1999	A		B		Indigenous		Imported*		Cum. 2000	Cum. 1999
			Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	2000	Cum. 2000	2000	Cum. 2000		
UNITED STATES	69	92	673	1,418	304	449	-	1	-	-	1	12
NEW ENGLAND	5	4	16	19	5	14	-	-	-	-	-	-
Maine	-	-	1	1	1	-	-	-	-	-	-	-
N.H.	1	1	4	1	3	-	-	-	-	-	-	-
Vt.	1	1	1	-	1	-	-	-	-	-	-	-
Mass.	3	2	3	9	-	6	-	-	-	-	-	-
R.I.	-	-	-	-	-	2	-	-	-	-	-	-
Conn.	-	-	7	8	-	6	-	-	-	-	-	-
MID. ATLANTIC	7	16	16	100	21	70	-	-	-	-	-	-
Upstate N.Y.	6	8	7	9	4	11	-	-	-	-	-	-
N.Y. City	-	5	9	44	17	19	-	-	-	-	-	-
N.J.	1	3	-	23	-	11	-	-	-	-	-	-
Pa.	-	-	-	24	-	29	-	-	-	-	-	-
E.N. CENTRAL	12	15	108	390	48	57	-	1	-	-	1	-
Ohio	7	8	47	55	9	12	-	-	-	-	-	-
Ind.	2	-	2	4	1	4	-	-	-	-	-	-
Ill.	2	7	6	79	-	-	-	-	-	-	-	-
Mich.	1	-	52	248	38	37	-	1	-	-	1	-
Wis.	-	-	1	4	-	4	-	-	-	-	-	-
W.N. CENTRAL	1	4	86	81	13	26	-	-	-	-	-	-
Minn.	-	-	7	-	-	-	-	-	-	-	-	-
Iowa	-	1	10	5	-	2	-	-	-	-	-	-
Mo.	1	1	66	63	13	16	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	U	-	U	-	-	-
S. Dak.	-	1	-	-	-	-	U	-	U	-	-	-
Nebr.	-	-	3	7	-	6	-	-	-	-	-	-
Kans.	-	1	-	6	-	2	U	-	U	-	-	-
S. ATLANTIC	17	19	45	101	38	66	-	-	-	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	-	-
Md.	9	15	11	42	13	25	-	-	-	-	-	-
D.C.	-	-	-	6	-	-	-	-	-	-	-	-
Va.	-	-	3	8	6	6	-	-	-	-	-	-
W. Va.	-	-	-	-	-	-	-	-	-	-	-	-
N.C.	2	2	20	10	11	26	-	-	-	-	-	-
S.C.	-	1	1	-	1	7	-	-	-	-	-	-
Ga.	-	1	-	35	-	2	-	-	-	-	-	-
Fla.	-	-	10	-	7	-	-	-	-	-	-	-
E.S. CENTRAL	2	7	51	47	31	30	-	-	-	-	-	-
Ky.	-	2	2	6	1	2	-	-	-	-	-	-
Tenn.	2	2	15	13	23	12	-	-	-	-	-	-
Ala.	-	2	8	17	2	8	-	-	-	-	-	-
Miss.	-	1	26	9	5	8	-	-	-	-	-	-
W.S. CENTRAL	-	6	59	113	4	28	-	-	-	-	-	-
Ark.	-	-	8	3	4	4	-	-	-	-	-	2
La.	-	-	-	1	-	-	U	-	U	-	-	-
Okla.	-	5	-	43	-	7	-	-	-	-	-	-
Tex.	-	1	61	66	-	17	-	-	-	-	-	2
MOUNTAIN	18	12	78	157	37	53	-	-	-	-	-	-
Mont.	-	-	1	-	1	-	-	-	-	-	-	-
Idaho	1	-	3	1	3	4	-	-	-	-	-	-
Wyo.	-	1	-	1	-	-	U	-	U	-	-	-
Colo.	5	-	22	34	7	13	-	-	-	-	-	-
N. Mex.	5	3	6	5	11	17	-	-	-	-	-	-
Ariz.	6	5	31	80	14	8	-	-	-	-	-	-
Utah	1	3	8	12	-	5	-	-	-	-	-	-
Nev.	-	-	5	14	1	6	U	-	U	-	-	-
PACIFIC	7	9	214	410	107	105	-	-	-	-	-	-
Wash.	2	-	3	5	1	-	-	-	-	-	-	10
Oreg.	2	3	24	16	11	6	-	-	-	-	-	2
Calif.	-	5	185	386	94	97	-	-	-	-	-	8
Alaska	-	1	2	2	1	2	-	-	-	-	-	-
Hawaii	3	-	-	1	-	-	-	-	-	-	-	-
Guam	-	-	-	2	-	1	U	-	U	-	-	-
P.R.	-	-	-	4	-	13	U	-	U	-	-	-
V.I.	-	U	-	U	-	U	U	-	U	-	-	-
Amer. Samoa	-	U	-	U	-	U	U	-	U	-	-	U
C.N.M.I.	-	U	-	U	-	U	U	-	U	-	-	U

N: Not notifiable

U: Unavailable

-: no reported cases

*For imported measles, cases include only those resulting from importation from other countries.

†Of 18 cases among children aged <5 years, serotype was reported for 6 and of those, 0 were type b.

TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending February 5, 2000, and February 6, 1999 (5th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999
UNITED STATES	178	196	3	11	37	76	291	357	1	1	1
NEW ENGLAND	11	17	-	-	3	14	62	57	-	-	1
Maine	1	2	-	-	-	2	2	-	-	-	-
N.H.	-	2	-	-	1	12	20	1	-	-	-
Vt.	1	1	-	-	-	-	20	7	-	-	-
Mass.	4	12	-	-	2	-	20	49	-	-	1
R.I.	1	-	-	-	-	-	-	-	-	-	-
Conn.	4	-	-	-	-	-	-	-	-	-	-
MID. ATLANTIC	10	24	1	1	4	5	15	11	-	-	-
Upstate N.Y.	3	3	1	1	-	5	15	5	-	-	-
N.Y. City	4	10	-	-	2	-	-	4	-	-	-
N.J.	3	7	-	-	-	-	-	2	-	-	-
Pa.	-	4	-	-	2	-	-	-	-	-	-
E.N. CENTRAL	24	32	-	-	2	13	88	56	-	-	-
Ohio	6	15	-	-	1	11	83	39	-	-	-
Ind.	6	3	-	-	-	1	1	1	-	-	-
Ill.	4	12	-	-	1	-	1	5	-	-	-
Mich.	7	1	-	-	-	1	3	5	-	-	-
Wis.	1	1	-	-	-	-	-	6	-	-	-
W.N. CENTRAL	26	19	-	2	1	2	4	11	-	-	-
Minn.	-	-	-	-	-	2	3	-	-	-	-
Iowa	3	3	-	1	1	-	-	4	-	-	-
Mo.	23	10	-	-	-	-	1	1	-	-	-
N. Dak.	-	-	U	-	-	U	-	-	U	-	-
S. Dak.	-	3	U	-	-	U	-	1	-	-	-
Nebr.	-	1	-	1	-	-	-	-	-	-	-
Kans.	-	2	U	-	-	U	-	5	U	-	-
S. ATLANTIC	26	19	1	2	3	3	19	29	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	-
Md.	4	6	-	-	-	3	6	18	-	-	-
D.C.	-	-	-	-	-	-	-	-	-	-	-
Va.	5	2	-	-	-	-	1	1	-	-	-
W. Va.	-	1	-	-	1	-	-	-	-	-	-
N.C.	8	3	-	-	1	-	4	10	-	-	-
S.C.	6	5	1	2	2	-	8	2	-	-	-
Ga.	-	2	-	-	-	-	-	-	-	-	-
Fla.	3	-	-	-	-	-	-	-	-	-	-
E.S. CENTRAL	8	21	1	1	-	-	6	12	-	-	-
Ky.	2	2	-	-	-	-	3	3	-	-	-
Tenn.	3	8	-	-	-	-	1	4	-	-	-
Ala.	3	8	1	1	-	-	2	5	-	-	-
Miss.	-	3	-	-	-	-	-	-	-	-	-
W.S. CENTRAL	1	11	-	-	8	-	1	8	-	-	-
Ark.	1	2	-	-	-	-	1	2	-	-	-
La.	-	4	U	-	-	U	-	-	U	-	-
Okla.	-	3	-	-	-	-	-	-	-	-	-
Tex.	-	2	-	-	8	-	-	6	-	-	-
MOUNTAIN	11	21	-	-	3	36	86	79	1	1	-
Mont.	-	-	-	-	-	-	-	-	-	-	-
Idaho	1	3	-	-	-	12	13	36	-	-	-
Wyo.	-	1	U	-	-	U	-	1	U	-	-
Colo.	1	5	-	-	1	15	47	13	-	-	-
N. Mex.	1	3	N	N	N	5	15	6	-	-	-
Ariz.	6	5	-	-	-	3	8	7	-	-	-
Utah	2	3	-	-	1	U	3	15	1	1	-
Nev.	-	1	U	-	-	U	-	1	U	-	-
PACIFIC	61	32	-	5	13	3	10	94	-	-	-
Wash.	4	3	-	-	-	1	2	1	-	-	-
Oreg.	13	7	N	N	N	2	6	3	-	-	-
Calif.	44	16	-	5	9	-	-	88	-	-	-
Alaska	-	3	-	-	1	-	2	1	-	-	-
Hawaii	-	3	-	-	3	-	-	1	-	-	-
Guam	-	-	U	-	-	U	-	-	U	-	-
P.R.	-	-	U	-	-	U	-	-	U	-	-
V.I.	-	U	U	-	U	U	-	-	U	-	U
Amer. Samoa	-	U	U	-	U	U	-	U	-	-	U
C.N.M.I.	-	U	U	-	U	U	-	U	U	-	U

N: Not notifiable

U: Unavailable

-: no reported cases

TABLE IV. Deaths in 122 U.S. cities,* week ending
February 5, 2000 (5th Week)

Reporting Area	All Causes, By Age (Years)						P&I [†] Total	Reporting Area	All Causes, By Age (Years)						P&I [†] Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	508	384	83	40	12	9	60	E. ATLANTIC	1,198	818	238	96	17	30	101
Boston, Mass.	152	108	23	14	4	3	16	Atlanta, Ga.	U	U	U	U	U	U	U
Bridgeport, Conn.	45	34	7	4	-	-	6	Baltimore, Md.	125	78	31	11	2	3	10
Cambridge, Mass.	16	14	1	1	-	-	3	Charlotte, N.C.	134	96	22	10	1	5	18
Fall River, Mass.	32	30	2	-	-	-	6	Jacksonville, Fla.	151	114	20	10	3	4	19
Hartford, Conn.	U	U	U	U	U	U	U	Miami, Fla.	101	66	17	12	4	2	7
Lowell, Mass.	32	19	11	1	1	-	3	Norfolk, Va.	69	53	13	2	-	1	5
Lynn, Mass.	18	12	4	2	-	-	1	Richmond, Va.	101	68	23	5	1	4	11
New Bedford, Mass.	30	22	7	1	-	-	5	Savannah, Ga.	62	42	14	4	1	1	11
New Haven, Conn.	46	22	11	7	3	2	2	St. Petersburg, Fla.	69	46	13	6	1	3	4
Providence, R.I.	U	U	U	U	U	U	U	Tampa, Fla.	249	184	48	14	2	1	15
Somerville, Mass.	5	5	-	-	-	-	1	Washington, D.C.	120	63	37	12	2	6	1
Springfield, Mass.	42	32	9	1	-	-	4	Wilmington, Del.	17	8	-	9	-	-	-
Waterbury, Conn.	30	21	5	3	-	1	3	E.S. CENTRAL	1,003	717	188	60	20	17	146
Worcester, Mass.	60	46	3	6	4	2	10	Birmingham, Ala.	168	125	27	10	3	2	26
MID. ATLANTIC	2,641	1,951	463	155	32	36	183	Chattanooga, Tenn.	105	79	18	5	3	-	18
Albany, N.Y.	50	36	11	2	-	1	4	Knoxville, Tenn.	86	64	14	5	3	-	10
Allentown, Pa.	U	U	U	U	U	U	U	Lexington, Ky.	64	47	10	2	1	4	12
Buffalo, N.Y.	132	90	29	9	-	2	10	Memphis, Tenn.	300	210	66	14	4	6	38
Camden, N.J.	44	29	7	7	-	1	1	Mobile, Ala.	83	61	14	6	2	-	6
Elizabeth, N.J.	23	21	1	1	-	-	-	Montgomery, Ala.	56	41	5	6	1	3	20
Erie, Pa.	57	44	12	1	-	-	5	Nashville, Tenn.	141	90	34	12	3	2	14
Jersey City, N.J.	64	51	7	2	2	2	-	W.S. CENTRAL	2,002	1,399	389	117	55	42	211
New York City, N.Y.	1,349	998	239	81	17	14	67	Austin, Tex.	79	54	15	7	1	2	11
Newark, N.J.	U	U	U	U	U	U	U	Baton Rouge, La.	41	36	5	-	-	-	15
Paterson, N.J.	17	10	4	2	-	1	2	Corpus Christi, Tex.	83	54	20	7	1	1	20
Philadelphia, Pa.	385	270	74	26	9	4	27	Dallas, Tex.	270	182	54	19	6	9	20
Pittsburgh, Pa.	94	66	16	4	2	7	10	El Paso, Tex.	167	106	33	11	13	4	20
Reading, Pa.	33	27	4	2	-	-	5	Ft. Worth, Tex.	165	116	36	4	3	7	21
Rochester, N.Y.	143	115	21	6	-	1	16	Houston, Tex.	367	251	77	29	7	3	29
Schenectady, N.Y.	30	25	4	1	-	-	7	Little Rock, Ark.	82	57	18	4	1	2	5
Scranton, Pa.	46	38	6	1	-	1	5	New Orleans, La.	174	118	29	13	11	3	-
Syracuse, N.Y.	101	82	12	3	2	2	14	San Antonio, Tex.	285	198	50	9	6	4	41
Trenton, N.J.	41	23	11	5	-	2	5	Shreveport, La.	126	87	25	9	2	3	23
Utica, N.Y.	32	27	U	U	-	-	5	Tulsa, Okla.	183	142	28	5	4	4	26
Yonkers, N.Y.	U	U	U	U	U	U	U	MOUNTAIN	1,064	708	216	89	27	20	108
E.N. CENTRAL	2,442	1,716	472	140	57	53	268	Albuquerque, N.M.	108	72	21	12	1	2	10
Akron, Ohio	75	53	16	3	-	3	14	Boise, Idaho	55	36	12	5	1	1	6
Canton, Ohio	36	32	5	1	-	-	4	Colo. Springs, Colo.	56	41	9	2	1	3	3
Chicago, Ill.	411	262	86	37	14	8	47	Denver, Colo.	111	71	24	10	4	2	16
Cincinnati, Ohio	92	69	16	4	1	2	7	Las Vegas, Nev.	248	157	61	19	8	3	24
Cleveland, Ohio	139	92	34	10	2	1	7	Ogden, Utah	34	26	6	-	2	-	8
Columbus, Ohio	208	143	52	7	3	3	16	Phoenix, Ariz.	156	97	33	14	7	4	13
Dayton, Ohio	169	125	31	6	5	2	24	Pueblo, Colo.	33	24	4	1	-	1	-
Detroit, Mich.	243	156	51	20	10	6	22	Salt Lake City, Utah	93	66	16	8	3	1	8
Evansville, Ind.	63	49	10	3	1	-	7	Tucson, Ariz.	170	118	30	18	3	1	20
Fort Wayne, Ind.	71	50	15	6	-	-	11	PACIFIC	1,980	1,406	367	117	30	35	265
Gary, Ind.	11	7	3	1	-	-	1	Berkeley, Calif.	17	10	5	-	-	2	2
Grand Rapids, Mich.	78	61	6	1	3	7	9	Fresno, Calif.	187	140	32	13	1	1	36
Indianapolis, Ind.	256	180	50	13	3	10	21	Glendale, Calif.	28	25	3	-	-	-	4
Lansing, Mich.	54	37	10	5	1	1	3	Honolulu, Hawaii	86	72	8	5	1	-	10
Milwaukee, Wis.	141	108	24	5	2	2	18	Long Beach, Calif.	76	53	14	5	1	3	9
Peoria, Ill.	53	40	4	6	2	1	1	Los Angeles, Calif.	381	262	81	23	10	5	28
Rockford, Ill.	66	49	11	1	2	3	9	Pasadena, Calif.	31	24	5	1	-	1	5
South Bend, Ind.	66	51	7	2	4	2	9	Portland, Oreg.	201	156	36	5	4	-	23
Toledo, Ohio	130	86	33	6	3	2	19	Sacramento, Calif.	U	U	U	U	U	U	U
Youngstown, Ohio	76	66	8	3	1	-	9	San Diego, Calif.	198	140	28	19	3	4	41
W.N. CENTRAL	1,066	825	148	62	16	15	140	San Francisco, Calif.	181	120	41	15	1	4	33
Des Moines, Iowa	113	94	12	5	1	1	25	San Jose, Calif.	213	147	41	11	5	9	34
Duluth, Minn.	39	31	6	1	1	-	1	Santa Cruz, Calif.	46	32	11	2	1	-	6
Kansas City, Kans.	42	26	8	5	3	-	11	Seattle, Wash.	133	86	28	9	3	5	11
Kansas City, Mo.	146	108	22	10	4	2	12	Spokane, Wash.	72	60	8	3	-	1	10
Lincoln, Nebr.	36	27	5	3	-	-	3	Tacoma, Wash.	110	77	26	6	-	-	13
Minneapolis, Minn.	241	203	26	7	2	3	27	TOTAL	13,884*	9,904	2,564	875	266	259	1,482
Omaha, Nebr.	104	75	17	8	-	4	10								
St. Louis, Mo.	97	69	11	4	1	2	-								
St. Paul, Minn.	136	107	19	6	1	3	31								
Wichita, Kans.	123	85	22	13	3	-	20								

U: Unavailable -no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 1,000,000 or more.

A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

[†]Pneumonia and influenza.

[‡]Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts

will be available in 4 to 6 weeks.

[§]Total includes unknown ages.

Vaccination Coverage Among Adolescents — Continued

In December 1997, CDC and the National Coalition for Adult Immunization met with expert health-care professionals, representatives of managed-care organizations, and education and advocacy groups in the adolescent health field to develop national goals for adolescent vaccination. A goal of 90% vaccination coverage for all recommended vaccinations by 2002 was adopted by 12 participating organizations,* reflecting the urgency for increasing vaccination coverage to lower the risk for preventable morbidity and mortality among adolescents.

References

1. CDC. Immunization of adolescents: recommendations of the Advisory of Committee on Immunization Practices, the American Academy of Pediatrics, the American Academy of Family Physicians, and the American Medical Association. MMWR 1996;45(no. RR-13).
2. Suarez L, Simpson D, Smith D. Errors and correlates in parental recall of child immunizations: effects on vaccination coverage estimates. Pediatrics 1997;99:1-5.
3. Shefer A, Briss P, Rodewald L, et al. Improving immunization coverage rates: an evidence-based review of the literature. Epidemiologic Rev 1999;21:96-142.
4. CDC. Effectiveness of a seventh grade school entry vaccination requirement—statewide and Orange County, Florida, 1997-1998. MMWR 1998;47:711-5.
5. Immunization Action Coalition. What's your state doing? Needle Tips & the Hepatitis B Coalition News 1999;9:7.
6. Smith N, Averhoff F. The effects of expanding hepatitis B vaccination recommendations for all children and adolescents. New Orleans, Louisiana: Pediatric Academic Society Annual Meeting, May 1-5, 1998.

*American Academy of Pediatrics; American Association of Health Plans; American College of Physicians; American Medical Association; Asian/Pacific Islander Hepatitis B Task Force; Association of State and Territorial Health Officials; Council of State and Territorial Epidemiologists; Inter-American College of Physicians; National Association of School Nurses; National Association of State Boards of Education; National Center for Youth Law; and Society for Adolescent Medicine.

*Notice to Readers***Revision of Infection Control Guidelines**

CDC's Healthcare Infection Control Practices Advisory Committee (HICPAC) is planning a revision of four infection control guidelines: the *Guideline for Prevention of Nosocomial Pneumonia*, the *Guideline for Prevention of Intravascular Device-Related Infections*, the *Guideline for Isolation Precautions in Hospitals*, and *Recommendations for Preventing the Spread of Vancomycin-Resistant Enterococci*. The committee is soliciting input from the public about the issues to be addressed in each of the revised guidelines. Comments and suggestions regarding the revision of these four guidelines should be forwarded by mail to HICPAC Guidelines, CDC, Mailstop A-07, 1600 Clifton Road, NE, Atlanta, GA 30333, or by e-mail to HICPAC@cdc.gov. Deadline for receipt of comments is March 31, 2000.

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